
Option 61 upgrade to Option 61C

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Reference list

The following are the references in this section:

- "Tools" on page 21
- *Software Conversion Procedures* (553-2001-320)
- "Terminal and modem connections" on page 933
- *Digital Clock Controllers: Installation and Administration* (553-3001-111)
- *System Installation Procedures* (553-3001-210)

This section describes upgrading a Meridian 1 Option 61 to an Option 61C. Upgrading requires powering down the Option 61, removing and replacing the NT6D39 CPU/Network card cages with the NT5D21 Core/Network card cages, and installing the Release 25 software.

CAUTION

Read through the entire procedure before you begin this upgrade.

Perform a thorough audit on the existing system to verify the suitability of the upgrade package and to resolve any existing operational problems, error messages, or other problems.

Before any upgrade, we strongly recommend that you perform a thorough audit of the existing system:

- Verify the suitability of the upgrade package you are considering.
- Resolve any existing operational problems, error messages, or other problems.
- Check for minimum vintage requirements on all circuit cards that will remain in the system.
- Verify that all equipment needed for the upgrade has been identified.

CAUTION

Performing this upgrade will require system downtime. Schedule for this when planning the system upgrade.

Because an Option 61 has both CPU/Network modules in the same column, power to the entire column must be shut off to accomplish the upgrade. This will cause loss of service to the whole telephone system. The upgrade must be planned for a time when the impact to the telephone users will be minimal.

Equipment required

The hardware required for this upgrade is provided in the core card cage upgrade package. All existing equipment that will be retained must be compatible with X11 Release 25. You must order replacements for equipment that does not comply.

Additional equipment may also be needed to meet site requirements. Verify that all equipment needed for the upgrade has been identified.

Table 61 lists the equipment required to upgrade a Meridian 1 Option 61 system to a Meridian 1 Option 61C system.

Table 61

Hardware required to upgrade an Option 61 system to Option 61C

Quantity	Part Number	Description
2	NT5D61AA	Input-Output Disk Unit w/ CDROM (IODU/C)
2	NT5D2103	Core/Network Card cages
2	NT9D19 or	Call Processor cards (CP) (see note 1)
2	NT5D10 or	
2	NT5D03	
2	NT6D65AA	
2	NTND11	Core to Network Interface card (CNI)
2	NTND11	CP-to-CP Cable
1	NTND13	SCSI Cable
2	NT7D89	RS-232 Cable
2	NT7D90	IOP-to-I/O Panel Ethernet Cable
2	NT8D80AZ	3PE to 3PE Cable
1	NT8D75AD	Clock to Clock Cable
2	NT8D99AB	D and E port cable
2	NT1R90AB	Trim Panel Kit
Note 1: Two NT9D19 (68040), NT5D10 (68060) or two NT5D03 (68060E) CP cards are required.		

In addition, verify that the following cards installed in your current Option 61 system are the correct vintages (vintages earlier than these will not work in an Option 61C):

- QPC441 3PE card vintage F
- QPC471 Clock Controller card vintage H
- QPC775 Clock Controller card vintage E

Upgrade preparation

The following summarizes the steps you must perform before beginning the upgrade:

- 1 Check equipment required for the upgrade.
- 2 Prepare cables for the installation.
- 3 Check the contents of the upgrade package, including all circuit cards and cables. Make sure all of the items on the order form are on the packing slip that comes with the equipment.
- 4 Check the tool list in "Tools" on page 21. Make sure all the tools are on hand.
- 5 Check the cards that you will be reusing to ensure that they can be used in the 61C switch.
- 6 Separate the cables in the upgrade package. Label both ends of all cables.
- 7 If they are not already labeled, label both ends of the existing cables to the clock controller cards in both CPU 1 and CPU 0.
- 8 If QPC471 Clock Controller cards in the Option 61 are not minimum vintage H, you must replace them before the upgrade. (This requirement does not apply to QPC775 Clock Controller cards.)
- 9 Convert the customer database to Release 25 compatibility.

- 10 Follow "Procedure 1: Pre-conversion procedure," *Software Conversion Procedures* (553-2001-320), and print configuration records:

Check the configuration record printouts to identify all configured I/O ports. When you transfer call processing to Core/Network modules, one I/O address should be available for a CPSI port. Refer to "Terminal and modem connections" on page 933 for specific information regarding the terminal and modem settings.

- a If only one address is available, the CPSI port for a terminal connection is automatically assigned to it.
- b If more than one address is available, the CPSI port for a terminal connection is automatically assigned to the first available address (the lowest number). If more than one address is available, the I/O port for a modem connection is also assigned automatically.
- c If there is no address available, the device assigned to I/O address 15 is automatically replaced by the CPSI port for a terminal connection.

Performing a data dump

Before converting your customer database, you must perform a data dump to your current tapes or disks.

- 1 Log into the system.
- 2 Load the Equipment Data Dump Program (LD 43). At the prompt, enter **LD 43** to load the program
- 3 When "EDD000" appears on the terminal, enter **EDD** to begin the data dump
- 4 When "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" displays on the terminal, enter ******** to exit the program

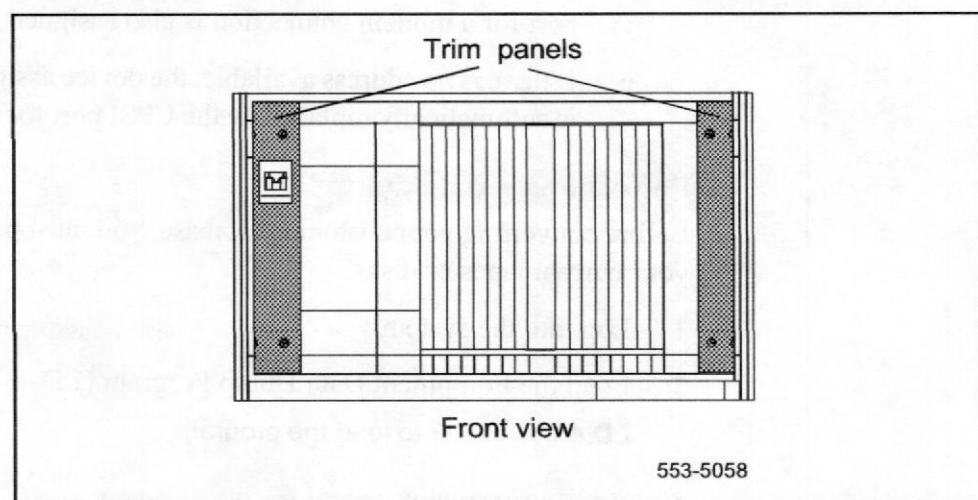
CAUTION

If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

Installing the card cage

- 1 Perform the appropriate step below to turn off power to the column:
 - a For AC-powered systems, set the main circuit breaker for the column to OFF (down position) in the rear of the pedestal.
 - b For DC-powered systems, set the circuit breaker for the module to OFF (down position) in the rear of the pedestal.
- 2 Remove the trim panels on both sides of the modules (see Figure 71). Keep the screws for reuse.

Figure 71
Location of the trim panels



- 3 Tag and disconnect all cables connected to the front of each card in each CPU/Network module. Note the exact positions of the cables connected to cards on the network side of the card cage. They must connect to the same card when the switch is reassembled. Tape over the contacts to avoid grounding. Tape or tie all cables to the sides so the working area in front of the card cage is totally clear.
- 4 On all cards with an ENB/DIS switch on the faceplate, set the switch to DIS.

- 5 On each card cage, remove the three mounting screws that secure the front of the card cage to the bottom of the module. Keep the screws for reuse.

WARNING

It may be necessary to temporarily remove some of the cards to get to the three mounting screws. Be sure to replace these cards in exactly the same slots after the screws have been removed.

- 6 Tag and disconnect cables from the I/O panels. Remove the I/O safety panel that covers the rear of the backplane.
- 7 Tag and disconnect the system monitor ribbon cables to J1 and J2.
- 8 On each card cage, remove the two mounting screws that secure the rear of the card cage to the module. Keep the screws for reuse. (A 1/4" socket wrench is needed for this operation.)

WARNING

Be careful not to drop any of the screws, nuts, or washers that you remove. Parts that fall down into the blower assembly are difficult to retrieve, and could cause premature failure of the blower assembly.

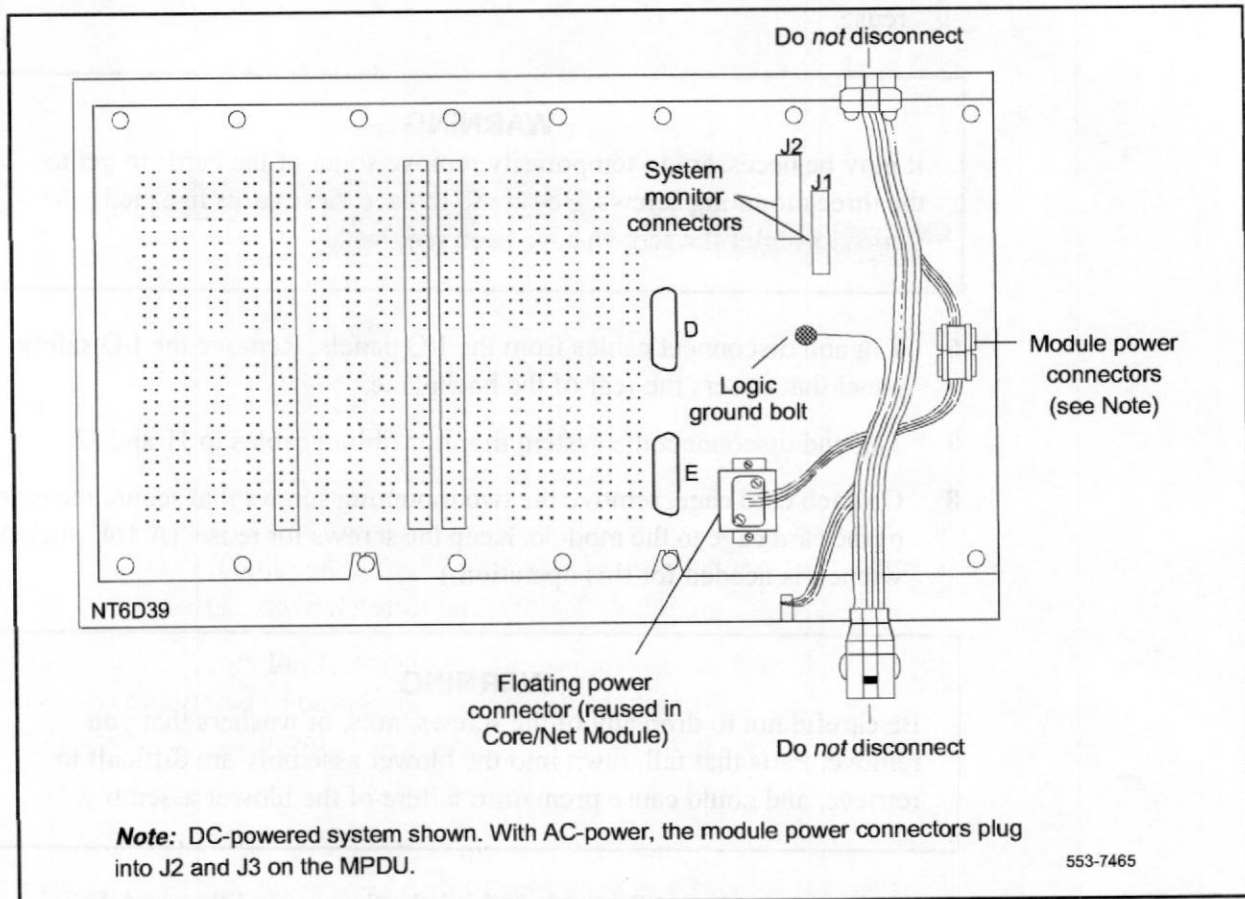
- 9 Pull each card cage forward until it is halfway out of the module.
- 10 Working from the rear of the module, tag and disconnect the two cables that connect the D and E connectors on the bottom (CPU/Network 0) module to the D and E connectors on the top (CPU/Network 1) module (see Figure 72).

WARNING

Do not disconnect the main power connectors (large orange connectors) at the top and bottom of the module.

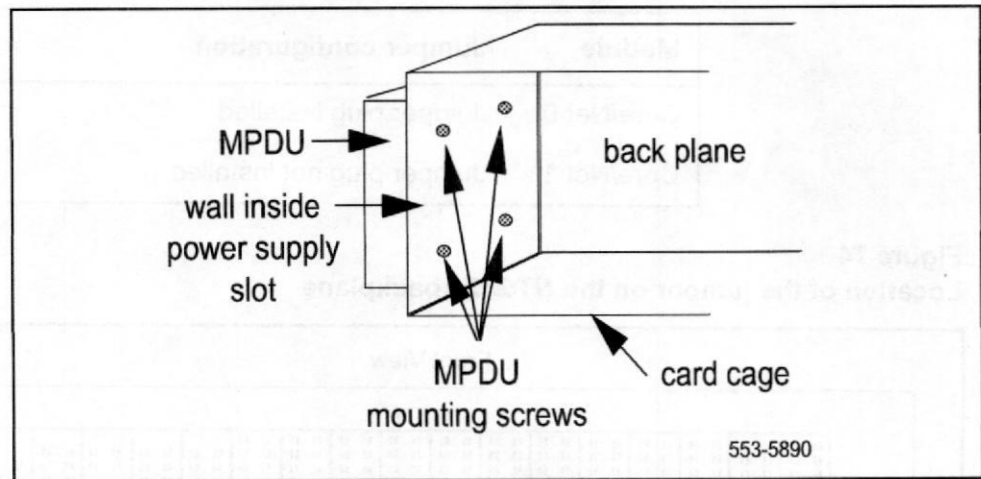
- 11 Remove the logic ground (orange) wire from the backplane bolt. Be careful; do not drop the nut or lock washer into the pedestal.

Figure 72
Power connectors on the rear of the CPU/Network module backplanes



- 12 Tag and remove all SDI Paddle boards. They will be reused in the new Core/Net module.
- 13 Tag and disconnect the module power connectors. These are small orange connectors plugged into the module Power Distribution Unit (MPDU) with AC power or connected to each other with DC power.
- 14 Remove the CPU card cages from the modules.

Note: For AC-powered systems: If the new NT5D21 Core/Network modules did not come with a module Power Distribution Unit (MPDU), you must remove the MPDU from each CPU/Network card cage and reinstall it on the new Core/Network card cage after the CPU/Network card cage is out of the module. The screw-heads for the MPDU are in the wall of the power supply slot (see Figure 73).

Figure 73**Location of the screws for the Module Power Distribution Unit (MPDU)**

- 15 Remove the existing floating power connector (the black connector) from the rear of each CPU card cage. Using the same mounting screws and nuts, attach the connectors to the Core/Network card cages.

Note: Check the orientation of the connector. Looking at it from the rear of the card cage, the upper left corner pin should be empty (no wire) and the lower right corner pin should have a wire installed. The green wire should be up.

- 16 Check the backplane jumpers in the Core/Network card cages to identify Core/Net 0 and Core/Net 1 (see Table 62 and Figure 74). The jumpers are located on the bottom, front side of the backplane near slot 14.

CAUTION

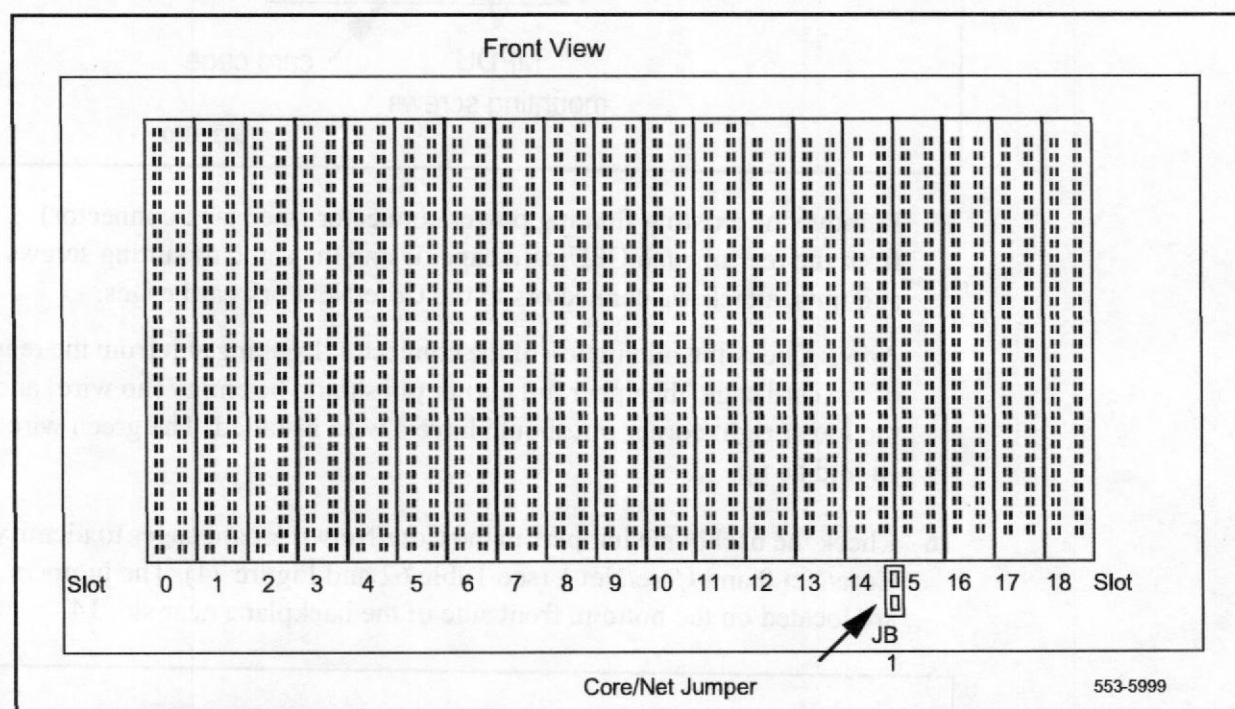
If the Core/Net module jumpers are set incorrectly, the system will not load and operate correctly.

- 17 Reposition the EMI shield (it looks like a brass grill) in the base of the module. Tape over the front mounting tabs to hold the shield in position. The tape will be removed later.

Table 62
Backplane jumper settings for NT5D21 Core/Network module

Module	Jumper configuration
Core/Net 0	Jumper plug installed
Core/Net 1	Jumper plug not installed

Figure 74
Location of the jumper on the NT5D21 backplane



- 18** Slide the Core/Net 0 card cage about halfway into the lower module. Hold the card cage firmly while attaching the power system connectors to the rear of the module (see Figure 75):

- a** Attach the new frame ground (green) wire to the frame ground post in each module. (A 5/16" socket wrench is needed for this operation.) Remove the nut and the lock washer at the top of the post. Put the frame ground connector over the post. Reinstall the top lock washer and the nut, then tighten the nut down.

Note: For all of the connectors to fit on the post, you need to remove one of the lock washers. You must leave a lock washer at the bottom of the post and at the top of the post. Leave a third lock washer between the second and third, or the third and fourth, connectors.

- b** Attach the logic ground (orange) wires. Remove one nut and the lock washer. Put the connector over the post, reinstall the lock washer and nut, then tighten the nut down. (A 3/8" socket wrench is needed for this operation.)
- c** Connect the module power connectors to the MPDU for AC power or to each other for DC power.
- d** Attach the system monitor ribbon cables. J1 goes down to the pedestal, J2 goes up the column.

- 19** Repeat the previous step for the Core/Net 1 card cage.

- 20** Slide the card cage all the way into the Core/Network module.

- 21** Check the position of the EMI shield. If it has shifted, reposition it. Remove the tape holding the EMI shield.

- 22** Secure the card cage to the module with the three screws in the front and the two screws in the rear.

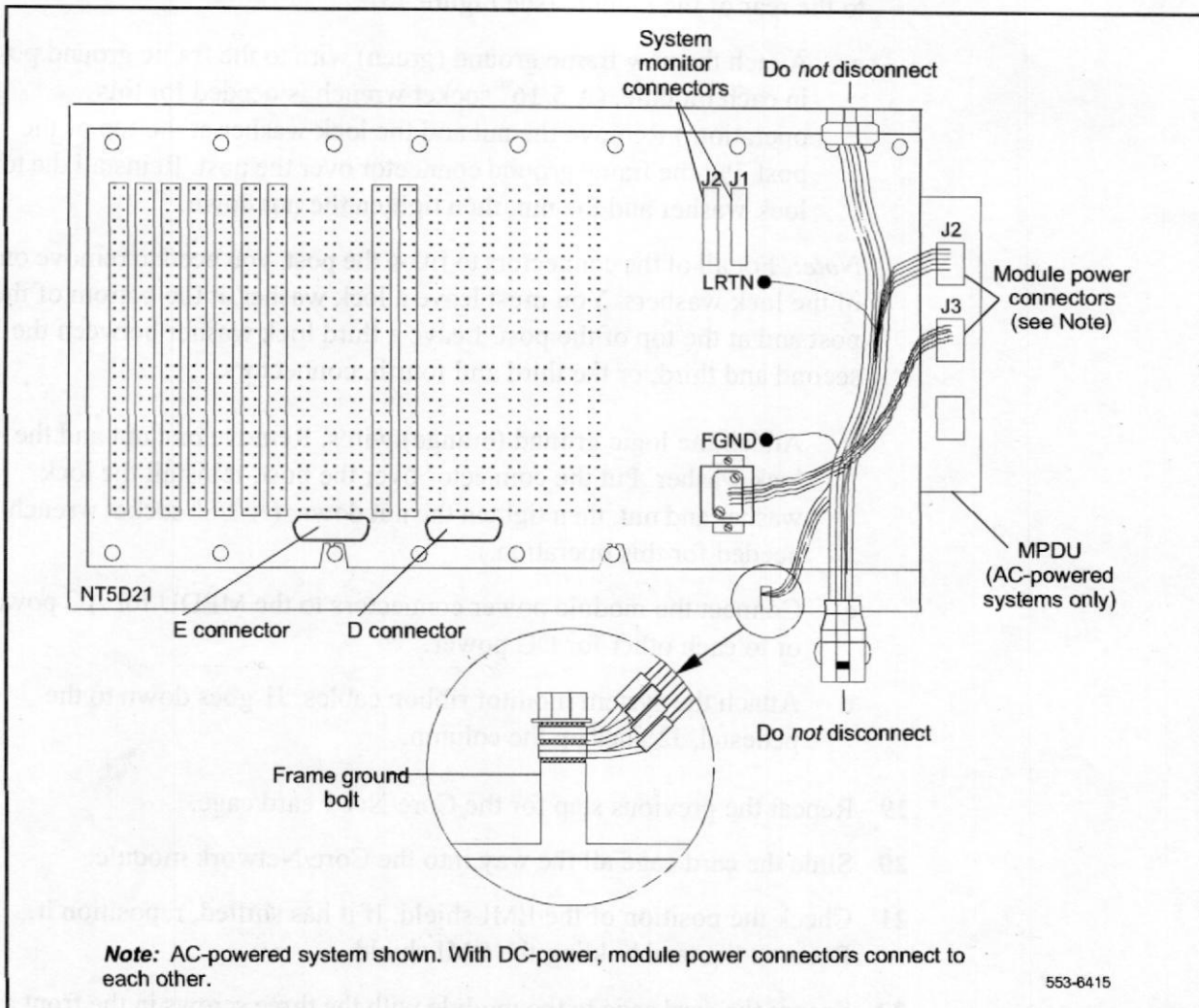
- 23** On the outside of the I/O safety panel, attach one extraction tool caution label above the "CAUTION hazardous voltage" label (see Figure 76).

- 24** In the bottom of the module, attach the other extraction tool caution label directly behind the position of the I/O safety panel.

- 25** In the bottom of the module, attach the clamp that holds the extraction tool directly behind the extraction tool caution label you just installed.

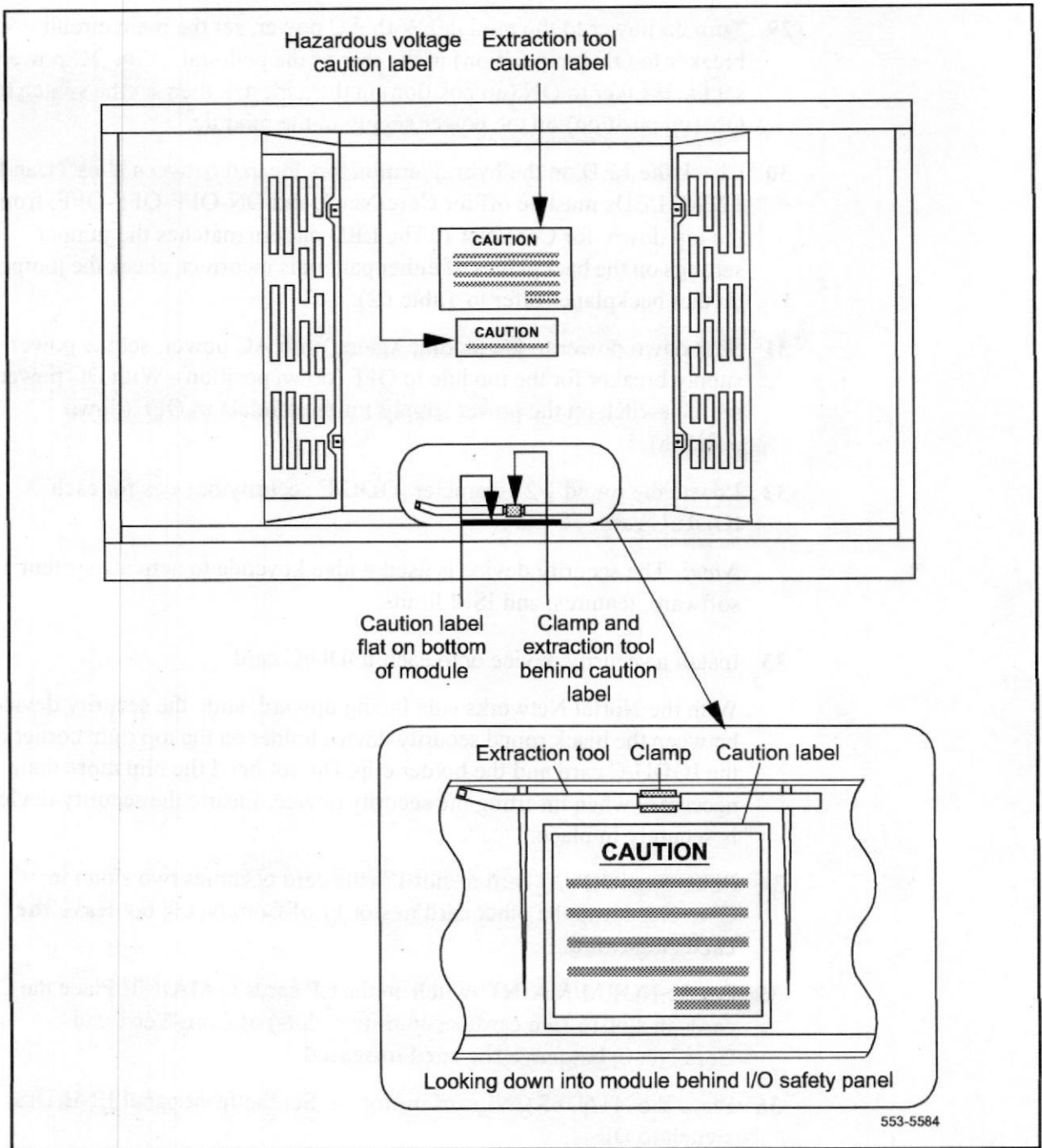
- 26** Snap the P0741489 Extraction Tool into the clamp.

Figure 75
Power connectors on the rear of the NT5D21 Core/Network module



- 27 Attach the Core/Network module designation labels, provided in the upgrade package, at the front and rear of the modules. These labels can go on top of the existing labels. The smaller label goes on the rear of the module.

Figure 76
Positioning the extraction tool and caution labels



- 28 Install the module power supply (reused from the CPU card cage) in the slot labeled "CE pwr sup" in the Core/Network card cage.
- 29 Turn on power to the module. With AC power, set the main circuit breaker to ON (up position) in the rear of the pedestal. With DC power, set the breaker to ON (up position) in the pedestal, then set the switch to ON (up position) on the power supply in the module.
- 30 Check the LED on the hybrid terminators located between slots 11 and 12. All LEDs must be off for Core/Net 0, and ON-OFF-OFF-OFF, from the top down, for Core/Net 1. The LED pattern matches the jumper settings on the backplanes. If either pattern is incorrect, check the jumper on that backplane (refer to Table 62).
- 31 Shut down power to the module again. With AC power, set the power supply breaker for the module to OFF (down position). With DC power, set the switch on the power supply for the module to OFF (down position).
- 32 Locate the round 1/2" diameter IODU/C security devices for each IODU/C card.

Note: The security device is used with a keycode to activate system software, features, and ISM limits.

- 33 Install a security device onto each IODU/C card:

With the Nortel Networks side facing upward, slide the security device between the black round security device holder on the top right corner of the IODU/C card and the holder clip. Do not bend the clip more than necessary when inserting the security device. Ensure the security device is securely in place.

- 34 Place one IODU/C card in slot 17 (the card occupies two slots) in Core/Net 1 and the other card in slot 17 of Core/Net 0, but leave the cards unseated.
- 35 Set the NORM/MAINT switch on the CP cards to MAINT. Place the CP cards in slot 15 (the card occupies two slots) of Core/Net 1 and Core/Net 0, but leave the card unseated.
- 36 Place the NT6D65 CNI card in slot 12. Set the front panel ENB/DIS switch to DIS.

- 37 Check the vintage of the QPC441 3PE card—it must be minimum vintage F. Set the front panel ENB/DIS switch to DIS. Set the option switches and jumper on the card (see Table 63). Place the card in slot 11.

Table 63

QPC441F 3PE card—option settings

D20 switch: Core/Net 1								Core/Net 0							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
off	on	on	off	on	on	on	off	off	on	on	off	on	on	on	on
RN27 jumper at E35:															
NT5D21 Core/Network module								set to A							
All other modules								set to B							

- 38 Place the QPC43 PS card in slot 10. Set the front panel ENB/DIS switch to DIS.
- 39 Set the option switches on the QPC471H Clock Controller card and set the front panel ENB/DIS switch to DIS. Refer to *Digital Clock Controllers: Installation and Administration* (553-3001-111) for switch settings.
- 40 Install the clock controller card in slot 9, Group 0, Network shelf 1, but leave the cards unseated.
- 41 Remove the network cards from the CPU/Network module and reinstall them in the new Core/Network card cage. Install the cards in slot numbers indicated in Table 64. Notice that although the slot numbers have changed, the relative positions of the cards in the modules have not.
- 42 Reinstall all SDI Paddle boards and reconnect the cables.

- 43 Follow the steps below to install the NT7D89 RS-232 cable that connects the CPSI ports on the CP card to the left I/O panel. The Y-cable connects one backplane connector to two connectors on the I/O panel (see Figure 79).

Note: The inside of the I/O panel faces the backplane. The word LEFT faces the outside of the module. The slot numbers listed below match the designations on the outside of the panel.

- a On the inside of the I/O panel, connect port A (for modem connection) to J21.
 - b On the inside of the I/O panel, connect port B (for terminal connection) to J25.
- 44 Connect the single connector end of the cable to backplane connector position 15D.
- 45 Connect a terminal to the CPSI port on J25 Core/Net 1

Table 64

Slot number translation for network cards

NT6D39 CPU/Net Slot Number	NT5D21 Core/Net Slot Number
1	0
2	1
3	2
4	3
5	4
6	5
7	6
8	7

Transferring the database from 4 MB to IODU/C

In this procedure you will transfer the Option 61 4MB database to the IODUC. This is accomplished using the direct cabling method (described below).

Note: The database can also be transferred using the Database Transfer Utility (included in the Software Kit) which requires an interim IOP/CMDU card to be used during the database transfer procedure (refer to the "Database Transfer" section in this book for instructions).

CAUTION

Ensure that Core/Net 1 is powered down when installing the IODU/C and MDU/SMDU into the Core/Net backplane. Failure to power down the module may cause damage to the MDU or SMDU cards.

IODU/C cabling

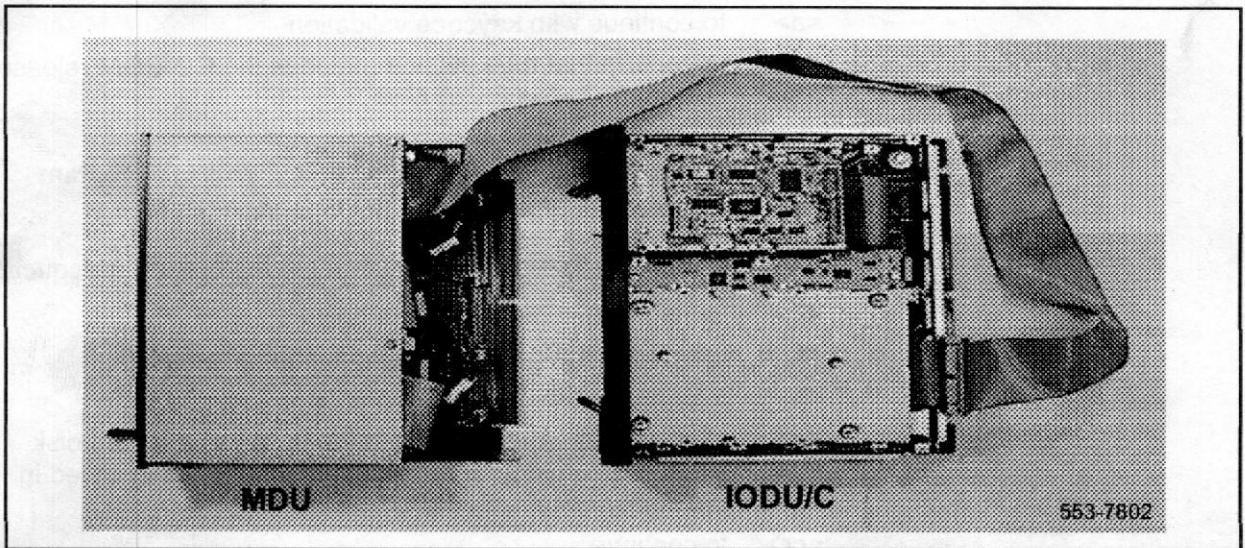
- 1 **Verify that the Core/Net module is powered down.**
- 2 Remove the IODU/C card from Core/Net 1.
- 3 Disconnect the NT5D54AA ribbon cable from the CD-ROM drive SCSI connector. **Do not** disconnect the cable from the IODU/C circuit board.
- 4 Plug the male connector of the NT5D50AA ribbon cable into the NT5D54AA SCSI ribbon cable that was just disconnected. Make sure that the colored edges of both ribbon cables are lined up when connecting the cables (P1 to P1).
- 5 Route the other end of the NT5D50AA ribbon cable over the CD-ROM drive, past the IODU/C faceplate, to the empty network card slots where the MDU will be temporarily installed.
- 6 Install the IODU/C card into slot 17 of Core/Net 1.

MDU cabling

- 1 If the MDU or SMDU was stored in CPU 0 or network module, use the following steps to remove the MDU/SMDU:
 - a Software disable the QPC584 MSI card, NT9D34 EMSI card, or QPC742 FDI card in the active CPU.:
LD 37 to load the program
DIS MSI 0 to disable the card
 - b Remove the floppy diskettes from the disk drives.
 - c Label and disconnect cables from the faceplate of the MDU or SMDU.
 - d Unhook the lock latches on the MDU/SMDU and gently pull the unit forward two or three inches.

Note: When removing an MDU, wait at least 30 seconds after unplugging the unit from the card slot before you remove it from the card cage. This allows the hard disk drive to stop spinning, and reduces the risk of damage to the drive.
- 2 Unplug the NTND1602 SCSI ribbon connector from the MDU/SMDU floppy drive A. Floppy drive A is at the top of the MDU/SMDU card.
- 3 Plug the NT5D50AA ribbon cable P2 female connector into the floppy drive A connector on the MDU/SMDU (see Figure 77, on page 469). Make sure that the colored edge of the ribbon cable is towards the floppy drive power connector. This connects the IODU/C to the MDU/SMDU floppy drive A.
- 4 Install the MDU/SMDU into an empty network card slot in the Core/Net 1 module. If the SMDU is used, you must also install the NT9D34 EMSI card next to the SMDU in a network slot of Core/Net 1. Connect the NT9D66 faceplate cable (J1) between the SMDU and EMSI cards.
- 5 Insert the B1 (4MB) customer database diskette previously archived, into the floppy drive A (top drive) of the MDU/SMDU.

Figure 77
Cabling the MDU to the IODU/C card



- 6 Verify that the CP card is set to MAINT and install the card in slot 15 (the card occupies two slots).
- 7 Set the ENB/DIS switch on the IODU/C card to ENB (and EMSI if installed).
- 8 Insert the CP Install Program diskette that corresponds with the installed CP card type into IODU/C floppy drive.
- 9 Apply power to the module.

The system is now loading software from the floppy diskette and the terminal will display SYSLOAD messages during file loading. Wait for the NT logo to appear after SYSLOAD has been completed.

- 10 When the NT logo appears, CP Install Program diskette press <CR> to continue.
- 11 Enter the date and time, when prompted.
- 12 When the Main Menu appears, select the following command from the menu:

<u> to Install menu

- 13 Remove the CP Install Program diskette and insert the Keycode diskette, when prompted.

- <a> to continue with keycode validation
- <y> to confirm that the keycode matches the CD-ROM release and return to the Install Menu

- 14 Remove the Keycode diskette and re-insert the CP Install Program diskette into the IODU/C floppy drive in Core/Net 1.

- 15 When the Install Menu appears, select the following options in sequence:

- <d> to install customer database only
- <f> to transfer the customer database from the MDU
- <a> to continue the database transfer
- <a> to transfer the database from the floppy to the hard disk (make sure customer database B1 diskette is installed in the floppy drive A on the MDU)
- <cr> to continue
The Installation Status Summary menu appears to confirm database transfer
- <y> to start installation
- <a> Yes, transfer the database
Database transfer begins. After the customer database is successfully transferred, the system displays "Success! Database Transferring complete".
- <cr> Press Return to display the Installation Status Summary, which shows that the database was successfully transferred.

Remove any diskettes from the floppy drive.

- <q> When the Install Menu appears, select <q> to quit.
- <y> to confirm quit
- <a> to reboot the system

The system will automatically perform a sysload during which several messages will appear on the system terminal.

- 16 Shut down power to Core/Net 1 module.

- 17 Remove the IODU/C card and disconnect the ribbon cable NT5D50AA from the CD-ROM drive connector. Reinstall the NT5D54AA SCSI ribbon cable between the CD-ROM drive and the J9 motherboard connectors.
- 18 Reinstall the IODU/C into the card slot 17 and ensure that the ENB/DIS switch is set to ENB.
- 19 Insert the CP Install Program diskette that corresponds with the installed CP card into the IODU/C floppy drive.
- 20 Unplug and remove the MDU/SMDU from the network card slot of Core/Net and disconnect the NT5D50AA ribbon cable from the floppy disk drive A and reconnect the NTND1602 SCSI ribbon cable to the disk drive A. Unplug and remove the EMSI card from Core/Net module, if equipped.
- 21 Install the remaining Core/Net circuit cards and faceplate enable them. **Leave the CNI cards disabled** to ensure call processing is not disrupted on the active CPU.
- 22 Apply power to the module.

The database transfer procedure is complete and you are ready to install Release 25 software in Core/Net 1.

Installing Release 25 software in Core/Net 1

Before you begin:

- all cards must be installed in Core/Net 1
 - the CP Install Program diskette must be in the IODU/C floppy drive
 - the module must be powered on
- 1 Install the CD-ROM into the CD drive:
 - a press the button on the CD-ROM drive to open the CD-ROM disk holder
 - b place the CD-ROM disk into the holder with the disk label showing
 - c use the four tabs to secure the CD-ROM in the disk holder
 - d press the button again to close the CD-ROM disk holder (don't push the holder in by hand)

- 2 Enter the date and time when prompted.
- 3 When the Main Menu appears, select the following options in sequence:
 - <u> to Install menu
- 4 Remove the CP Install Program diskette and insert the Keycode diskette. Select the following when prompted:
 - <a> to continue with keycode validation
 - <y> to confirm that the keycode matches the CD-ROM release
- 5 When the Install Menu appears, select the following options in sequence:
 - <a> to install software, CP-BOOTROM, and IOP-ROM
 - <a> to verify that the CD-ROM is now in drive

The Installation Status Summary screen appears to confirm that you are installing CD to disk, disk to ROM, CP-BOOTROM, and IOP-ROM. Select the following to continue:

 - <y> to start installation
 - <a> to continue with upgrade

The software installation begins. The CD-ROM files are copied to the system hard disk. When you are prompted to replace the previous CP-software with ROM image files, select:

 - <a> to continue with ROM upgrade

When all files were copied from the CD-ROM to the hard disk, press:

 - <CR> to continue

You are prompted to replace old CP-BOOTROM with the ROM image files. Select:

 - <a> to continue with ROM upgrade (this installs CP flash ROM on the Call Processor card)

The system confirms that the release and issue of IOP-ROM is the same release and issue of the ROM image file. Select the following options in sequence:

 - <y> to start installation
 - <a> to continue with ROM upgrade (IOP-ROM is installed)

The Installation Status Summary screen appears to confirm that CD to disk, disk to CD, CP-BOOTROM and IOP-ROM were installed successfully. Press:

 - <CR> to continue

When the Install Menu appears, select the following options in sequence to quit and reboot the system:

<q> to quit

<y> to confirm quit

Remove the diskette from the floppy drive.

<a> to reboot the system

The system will automatically perform a sysload. Wait for "DONE" and "INI" messages to be displayed before continuing.

- 6 When the sysload is complete, log into the system.
- 7 Confirm that the X11 Release 25 software is installed and functional on Core/Net 1:

LD 135 to load the program
STAT CPU to display the CPU status
- 8 Remove the CD-ROM disk from the IODU/C. Make sure that the 2MB diskettes are installed in the IODU/C floppy drive to data dump the customer database:

LD 43 to load the program
- 9 When "EDD000" appears on the terminal, enter:

EDD to begin the data dump
- 10 When "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" appears on the terminal, enter:

******** to exit the program

CAUTION

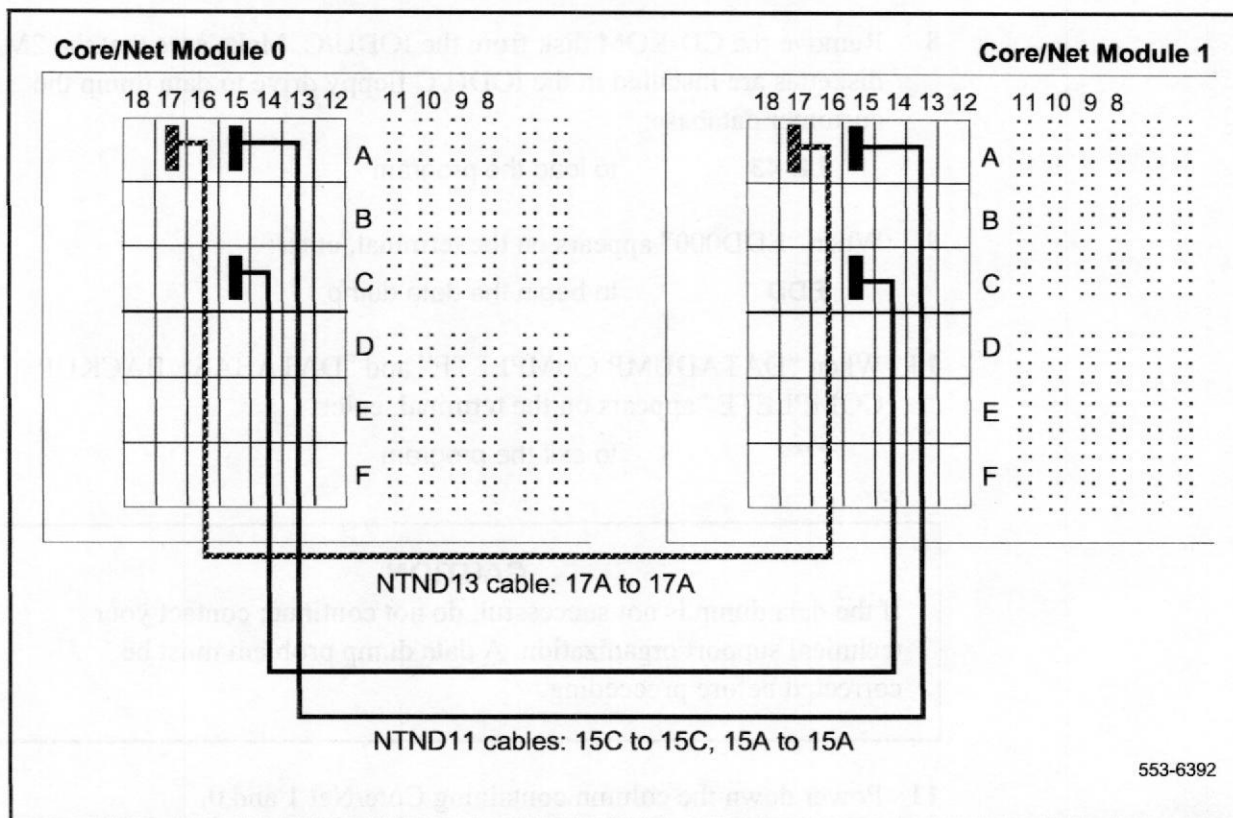
If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

- 11 Power down the column containing Core/Net 1 and 0.

Installing intermodule cables

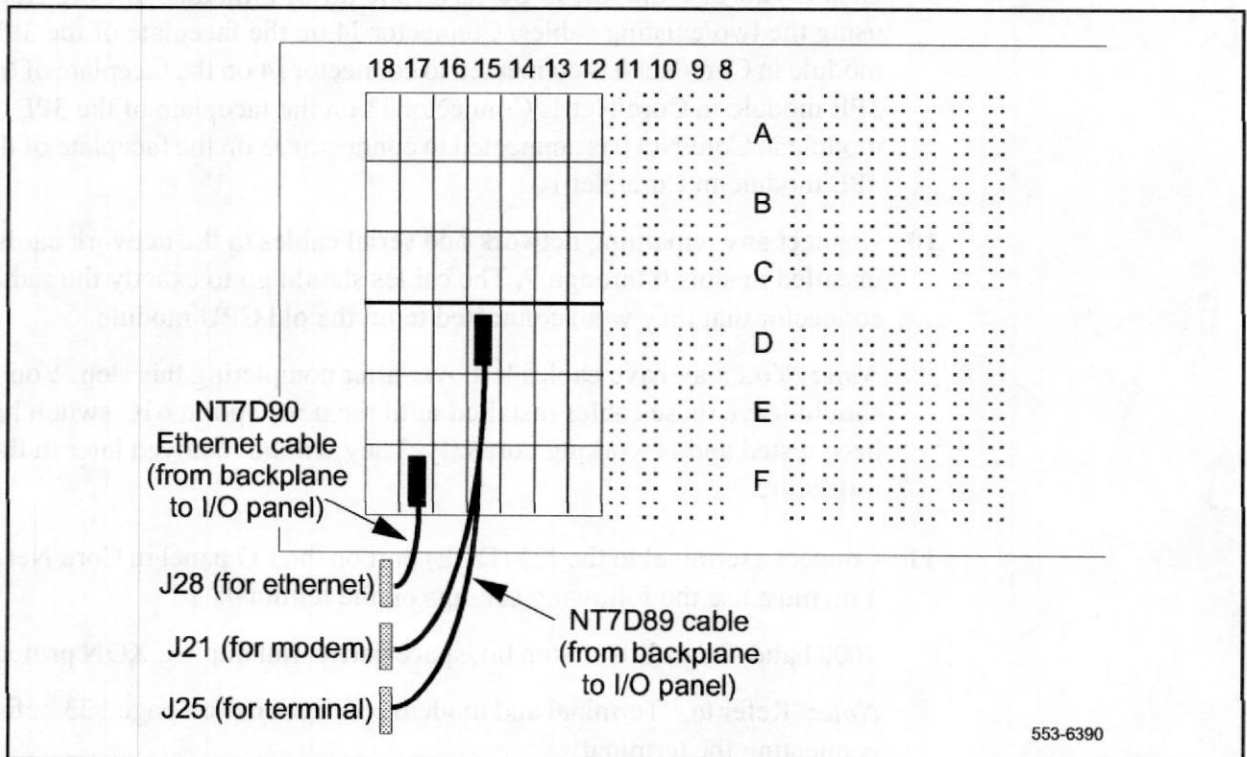
- 1 Install the NTND13 SCSI cable from backplane connector 17A in Core/Net 0 to connector 17A in Core/Net 1 (see Figure 78).
- 2 Install the first NTND11 CP-to-CP cable from backplane connector 15A in Core/Net 0 to connector 15A in Core/Net 1 (see Figure 78).
- 3 Install the second NTND11 CP-to-CP cable from backplane connector 15C in Core/Net 0 to connector 15C in Core/Net 1 (see Figure 78).
- 4 At the rear of each Core module, connect an NT7D90 Ethernet Cable from backplane connector position 17F to J28 on the I/O panel (see Figure 79)

Figure 78
NT5D21 Core/Net module (rear)—NTND13 and NTND11 cables



- 5 Install the first NT8D99AB D and E cable from the backplane connector labeled D in Core/Net 0 to the backplane connector labeled D in Core/Net 1.
- 6 Install the second NT8D99AB D and E cable from the backplane connector labeled E in Core/Net 0 to the backplane connector labeled E in Core/Net 1.

Figure 79
NT5D21 Core/Network module (rear)—RS-232 cable connections for CPSI ports



- 7 Follow the appropriate steps below to connect the clock controller cables:

- 8 For a QPC471 card, connect the NT8D75 cable from J3 (on the faceplate of the clock controller card) in Core/Net 0 to J3 of the clock controller card in Core/Net 1.
 - a For QPC775 Clock Controller cards, connect the NT8D75 cables from J2 (on the faceplate of the clock controller card) in Core/Net 0 to J2 of the clock controller card in Core/Net 1.
 - b Leave the ENB/DIS switch set to DIS on QPC471 or QPC775 cards.

- 9 Connect the 3PE module in Core/Net 0 to the 3PE module in Core/Net 1 using the two existing cables. Connector J4 on the faceplate of the 3PE module in Core/Net 0 is connected to connector J4 on the faceplate of the 3PE module in Core/Net 1. Connector J3 on the faceplate of the 3PE module in Core/Net 0 is connected to connector J3 on the faceplate of the 3PE module in Core/Net 1.

- 10 Connect any remaining network and serial cables to the network cards installed in slots 0 through 7. The cables should go to exactly the same connector that they were connected to on the old CPU module.

Note: You may have cables left over after completing this step. You should leave these cables installed until the new Option 61C switch has been tested and is working correctly. They will be removed later in this procedure.

- 11 Connect a terminal to the J25 (DCE) port on the I/O panel in Core/Net 0. You must use the following settings on the terminal:

9600 baud, 7 data bits, 1 stop bit, space parity, full duplex, XON protocol

Note: Refer to "Terminal and modem connections" on page 933 before connecting the terminal.

- 12 Perform the appropriate step to turn on power to the column:
 - a For AC-powered systems, set the main circuit breaker to ON (up position) in the rear of the pedestal.
 - b For DC-powered systems, set the circuit breaker to ON (up position) in the pedestal.

- 13 Verify that the CNIs in Core/Net 0 are disabled.

- 14 Verify that all CNIs in Core/Net 1 are enabled.

- 15 Verify that the both CP cards are in MAINT.
- 16 Verify that the remaining cards in Core/Net 1 and 0 are enabled, but leave the CNIs in Core/Net 0 disabled.

Copying the software and database to Core/Net 0

You will now copy system software from Core/Net 1 to Core/Net 0, install CP-software on CP 0, install ROMS on CP 0, and transfer the database from Core/Net 1 to Core/Net 0.

- 1 **Verify that the MAINT/NORM switch on the CP card in Core/Net 0 is set to MAINT.**
- 2 Insert the CP Install Program diskette into the IODU/C floppy drive in Core/Net 0. Make sure that the CP Program Install diskette corresponds to the CP card type installed in the system.
- 3 **Press the MAN RST button on the CP card in Core/Net 0** to reboot the system and start the Software Installation Tool. (The terminal displays SYSLOAD messages during file loading. When SYSLOAD is completed, the NT logo appears.)
- 4 When the NT logo appears, press <CR> to continue.
- 5 When the Main Menu appears, select the following options in sequence:
 - <u> to Install menu
- 6 Remove the CP Install Program diskette and insert the Keycode diskette. Select the following when prompted:
 - <a> to continue with keycode validation
 - <y> to confirm that the keycode matches the CD-ROM release
- 7 When the Install Menu appears, select the following options in sequence to copy the software from Core/Net 1 to Core/Net 0, install CP-software, ROMs, and transfer the database to the redundant disk:
 - <o> to copy system software from the other core
 - <a> to copy /p partition from Core1 to Core 0
 - <a> to continue with upgrade

When the software has copied successfully, you must install CP-software from the hard disk to Flash EEPROM, and install CP-BOOT ROM.

- <CR>** press <CR> when you are ready to continue
- <y>** to start installation
- <a>** to continue with ROM upgrade
- <y>** to start installation
- <a>** to continue with ROM upgrade.

When the installation is complete, the Installation Status Summary screen appears.

- <CR>** to return to the Install Menu

When the Install Menu appears, install IOP-ROM:

- <f>** to install IOP-ROM only

When the Installation Status Summary screen appears:

- <y>** to start installation
- <y>** to continue installing IOP-ROM
- <a>** to continue with ROM upgrade

When the installation is complete, the Installation Status Summary screen appears.

- <CR>** to return to the Install Menu

When the Install Menu appears, install the database:

- <d>** to install database only
- <d>** to copy database from the redundant disk

When the Installation Status Summary screen appears:

- <y>** to start installation
- <a>** to continue transferring the database from the redundant disk

When the Installation Status Summary screen appears, press:

- <CR>** to return to the Install Menu

When the Install Menu appears, remove any diskettes in the floppy before rebooting the system:

- <q>** to quit
- <y>** to confirm quit
- <a>** to reboot the system

Wait for "DONE" and then "INI" messages to be displayed before continuing.

- 8 Load LD 43 and perform a data dump. This creates a backup on the floppy disk in the active IODU/C.

- 9 Load the Equipment Data Dump Program (LD 43). At the prompt, enter **LD 43** to load the program

When "EDD000" appears on the terminal, perform the data dump. At the prompt, enter

EDD to begin the data dump

When "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" appears on the terminal, enter

******** to exit the program

CAUTION

If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

Returning the system to redundant mode

- 1 Connect a terminal to CPSI J25 in Core/Net 1 or SDI port.
- 2 In Core/Net 0, enable the NT6D65 CNI cards by setting the ENB/DIS switch to ENB.
- 3 In Core/Net 0, press and release the MAN RST button.

When SYS700 messages in Core/Net 0 appear on the LCD display, set the MAINT/NORM switch to NORM in Core/Net 0.

- 4 In 60 seconds, the LCD will display and confirm the process:

RUNNING ROM OS ENTERING CP VOTE

An "HWI534" message from the CPSI port (Core/Net 1) or SDI port indicates the start of memory synchronization. Within 10 minutes, an "HWI533" message from the Core/Net 1 CPSI port indicates that Core/Net 1 memory and Core/Net 0 memory are synchronized. Wait until the memory synchronization is complete before continuing.

- 5 In Core/Net 1, set the NORM/MAINT switch to NORM on the CP card.

6 Perform a redundancy sanity test:

LD 135 to load the program
STAT CNI to get the status of all configured CNIs
STAT CPU to get the status of both Cores
TEST CNI c s to test the CNI on the inactive side

Note: Testing the CNI cards may take up to 90 seconds for each test.

7 Test the inactive Core, then switch Cores and test the other side:

TEST CPU to test the inactive CP card and CP-to-CP cable
TEST IPB to test the inactive Interprocessor Bus
SCPU to switch to Core 0
TEST CNI c s to test the CNIs (c = core, s = slot)
TEST CPU to test the inactive CP card and CP-to-CP cable
TEST IPB to test the inactive Interprocessor Bus

Note: Testing the CP can take up to 20 minutes.

8 Get the status of the CP cards and memory and of the CNIs:

STAT CPU to get the status of both Cores
STAT CNI to get the status of all configured CNIs
******** to exit LD 135

9 Synchronize the hard disks. To be sure the contents of IODU/C 1 are copied to IODU/C 0, verify that IODU/C 0 is disabled:

LD 137 to load the program
STAT to get the status of IODU/Cs, and redundancy (verify that IODU/C 1 is active)
SYNC to synchronize the hard disks
TEST CMDU Performs hard and floppy disk test.

Note: Synchronization may take up to 30 minutes.

After synchronization is complete, exit the program:

******** to exit LD 137

10 In the Configuration Record (LD 17), add LD 135 and LD 137 to the midnight routines. Remove LD 35, but leave LD 37 selected.

- 11** Insert a backup database disk from the set of installation diskettes into the active IODU/C for backup. Load LD 43 and perform a data dump. This creates a backup on the floppy disk in the active IODU/C.

- 12** Load the Equipment Data Dump Program (LD 43). At the prompt, enter **LD 43** to load the program

When "EDD000" appears on the terminal, perform the data dump. At the prompt, enter

EDD to begin the data dump

When "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" appears on the terminal, enter

******** to exit the program

CAUTION

If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

The upgrade is complete; the Option 61C is running X11 Release 25. Continue with "Completing the upgrade" to confirm system function.

Completing the upgrade

To complete the card cage upgrade, perform the following steps:

- 1** Test the IOP to IOP SCSI connection and test the IODU/Cs:

LD 137 to load the program

TEST SCSI to check the IOP to IOP connection and access to the IODU/Cs

TEST CMDU to test the hard and floppy disk drives (a floppy disk must be installed)

******** to exit the program

- 2** Test core functions:

LD 135 to load the program

TEST CPU to test the inactive CP card and CP-to-CP cable

TEST IPB to test the backplane protocol on the inactive side
TEST CNI c s to test each configured CNI on the inactive side

Note: Testing the CP can take up to 20 minutes.

If all the tests pass, switch Cores and test the side that is now inactive:

SCPU to switch to the other Core
TEST CPU to test the inactive CP card and CP-to-CP cable
TEST IPB to test the backplane protocol on the inactive side
TEST CNI c s to test each configured CNI on the inactive side

3 Clear displays, major alarms, and minor alarms:

CDSP to clear the display
CMAJ to clear all major alarms
CMIN ALL to clear all minor alarms
SCPU to switch to the other Core
CDSP to clear the display
******** to exit LD 135

4 Load overlay 60 and software enable clock controller cards and any PRI/DTI cards in the Core/Network modules:

LD 60 to load the program
ENL CC x to enable clock controller card 0 or 1
TRCK aaa if necessary, to set tracking
ENLL loop to enable the specified network loop and associated PRI/DTI card
******** to exit the program

5 For both Core/Network modules, install the appropriate trim panels from the upgrade package.

6 Perform all applicable acceptance test procedures in *System Installation Procedures* (553-3001-210).